If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match. The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are available by contacting the ESSHQ Procedures Coordinator, Bldg. 911A

C-A OPERATIONS PROCEDURES MANUAL

(Collider Electrical Power Supply Group Procedure CPS-002)

Note: This document was formerly a C-A Group Procedure. The content of the group procedure was reviewed by the Technical Supervisor. All approvals and/or issue dates of the original group procedure are maintained for present use.

15.2.2 Blue Power Supply System Lock-Out Procedure

Text Pages 3 through 5

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: _____***Signature on File***_____ _____
Collider-Accelerator Department Chairman Date

D. Bruno

BROOKHAVEN NATIONAL LABORATORY

Procedure: C-A-CPS-002
Revision: 04
Revision Date: 1/11/07

COLLIDER-ACCELERATOR DEPARTMENT

Title: Blue Power Supply System Lock-Out Procedure

Author: D. Bruno

Group: Collider Power Supply

Group Leader concurrence indicates procedure is still current.

Group Leader: Donald Bruno ***Signature on File*** Date: 1/11/07

This Procedure Must Be Reviewed By The Technical Supervisor Prior to use.
If This Procedure Does Not Reflect Current Equipment/Processes
Then Immediately Notify The Group Leader

Blue Power Supply System Lock-Out Procedure

This document will describe the lock-out procedure for Blue RHIC ring power supply systems excluding the 50 Amp Corrector supplies, Gamma-T supplies, Sextupole supplies, Snake and Rotator supplies and Warm-up Heater System. Please note lock/key number in blank. Sign and date this form at the bottom when complete.

I. Main Power Supplies in 1004-B:

1. Turn off the Control Power Switch:
   Front Panel following PS.
   (PPE = class 0+)

PBDFT _____
PBDR _____
PBQFT _____
PBQR _____

Before locking out the 480V disconnects observe 480V on all three line to line voltages on the volt meters on the front of the power supplies. Next, make sure all of the lights are flashing on the voltage monitor gauges on the back of the p.s.

2. Lock out the following 480V disconnect Switches:
   (PPE = class 4)
   (These have kirklocks, take key with you)

SBDFT _____
SBDR _____
SBQFT _____
SBQR _____

After you lock out the 480V disconnect switch make sure all three line to line voltages on the volt meters on the front of the power supplies read zero. Next make sure all of the lights are flashing are OFF on the voltage monitor gauges on the back of the p.s.

II. Insertion Region Bipolar Power Supplies:

1. Bldg. 1004-B:
   Using Cable Lockout…..
   a.) Panel P4BIR208 (PPE = class 2)

Lockout SW. #1 R4BQDF1 _____
Lockout SW. #6 R4BBQF4 _____
Lockout SW. #8 R4BBQF2 _____
Lockout SW. #7 R4BBQF3 _____
Lockout SW.#19 R4BBQF1 _____
Lockout SW.#14 R4BQT2 _____
Lockout SW.#13 R4BQT1 _____
Lockout b03-qf8-ps _____
Using Circuit Breaker Lockout device.

   b.) Panel P4BIR480 (PPE = class 4)

Lockout SW. #13 R4BBQF6 _____
Lockout SW. #10 R4BBQF5 _____
Lockout SW. #8 R4BOFF1 _____
Lockout SW. #7 R4BD3 _____
Lockout SW. #2 R4BD2 _____

2. Bldg. 1002
   Using Cable Lock-out….
   a.) Panel P2BIR208 (PPE = class 2)
   Lockout SW. # 6 R2BBQF4 _____
   Lockout SW. # 7 R2BBQF3 _____
   Lockout SW. # 8 R2BBQF2 _____
   Lockout SW.#19 R2BBQF1 _____
   Lockout SW. # 1 R2BQD1 _____
   Lockout SW. #14 R2BQT2 _____
   Lockout SW. #13 R2BQT1 _____
   Lockout bi1-qf9-ps using circuit breaker
   Lockout device _____

   b.) Panel P2BIR480 (PPE = class 4)
   Lockout SW. # 4 R2BBQF5 _____
   Lockout SW. # 2 R2BD2 _____
   Lockout SW. # 3 R2BD3 _____

3. Bldg. 1012
   Using Cable Lock-out….
   c.) Panel P12AIR208 (PPE = class 2)
   Lockout SW. # 6 R12ABQF4 _____
   Lockout SW. # 7 R12ABQF3 _____
   Lockout SW. #19 R12ABQF1 _____
   Lockout SW.# 8 R12ABQF2 _____
   Lockout SW. # 1 R12AQD1 _____
   Lockout SW. #14 R12AQT2 _____
   Lockout SW. #13 R12AQT1 _____
   Lockout bo11-qf8-ps using circuit breaker
   Lockout device _____

   d.) Panel P12AIR480 (PPE = class 4)
   Lockout SW. # 9 R12ABQF5 _____
   Lockout SW. # 4 R12AD2 _____
   Lockout SW. # 11 R12AD3 _____

4. Bldg. 1006
   Using Cable Lock-out…..
   e.) Panel P6BIR208 (PPE = class 2)
   Lockout SW. # 6 R6BBQF4 _____
   Lockout SW. # 7 R6BBQF3 _____
   Lockout SW. #19 R6BBQF1 _____
   Lockout SW.# 8 R6BBQF2 _____
   Lockout SW. # 1 R6BQD1 _____
   Lockout SW. #14 R6BQT2 _____
   Lockout SW. #13 R6BQT1 _____
   Lockout Bi5-qf9-ps using circuit breaker
   Lockout device _____

f.) Panel P6BIR480 (PPE = class 4)

Lockout SW. # 5 R6BBQF5 _____
Lockout SW. # 2 R6BD2 _____
Lockout SW. # 7 R6BD3 _____

5. Bldg. 1008
   Using Cable Lock-out…..
   g.) Panel P8BIR208 (PPE = class 2)

Lockout SW. # 6 R8BBQF4 _____
Lockout SW. # 7 R8BBQF3 _____
Lockout SW. #19 R8BBQF1 _____
Lockout SW.# 8 R8BBQF2 _____
Lockout SW. # 1 R8BQD1 _____
Lockout SW. #14 R8BQT2 _____
Lockout SW. #13 R8BQT1 _____
Lockout Bo7-qf8-ps using circuit breaker
Lockout device _____

h.) Panel P8BIR480 (PPE = class 4)

Lockout SW. # 4 R8BBQF5 _____
Lockout SW. # 2 R8BD2 _____
Lockout SW. # 3 R8BD3 _____

6. Bldg. 1010
   Using Cable Lock-out…..
   i.) Panel P10AIR208 (PPE = class 2)

Lockout SW. #12 R10ABQF4 _____
Lockout SW. #11 R10ABQF3 _____
Lockout SW.# 10 R10ABQF2 _____
Lockout SW.# 9 R10ABQF1 _____
Lockout SW. # 1 R10AQD1 _____
Lockout SW. # 2 R10AQD2 _____
Lockout SW. #18 R10AQT2 _____
Lockout SW. #17 R10AQT1 _____

j.) Panel P10AIR480 (PPE = class 4)

Lockout SW. # 13 R10ABQF5 _____
Lockout SW. # 14 R10ABQF6 _____
Lockout SW. # 15 R10AD4 _____
Lockout SW. # 4 R10AD3 _____
Lockout SW. # 6 R10AD7 _____
Lockout SW. # 16 R10AD8 _____

k.) Main 6K Dump Switch (PPE = class 0+)

Lockout SW. R10ADS2 _____
Lockout SW. R10ADS3 _____

NAME _____
LIFE # _____
DATE: _____